SWEIS Yearbook – 2002

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SWEIS Yearbook—2002

Comparison of 1998 to 2002 Data to Projections of the Site-Wide Environmental Impact Statement for Continued Operation of the Los Alamos National Laboratory

Ecology Group
Risk Reduction and Environmental Stewardship Division

Los Alamos
NATIONAL LABORATORY

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Acronyms

AFCI	Advanced Fuel Cycle Initiative
ALARA	as low as reasonably achievable
AOC	area of concern
BA	biological assessment
BSL	Biosafety Level
CASA	Critical Assembly and Storage Area
CDC	Centers for Disease Control
CDIS	Change During Interim Status
CINT	Center for Integrated Nanotechnologies
Ci	curie
CMR	Chemical and Metallurgy Research
CRMT	Cultural Resources Management Team
CSP2000	Comprehensive Site Plan for 2000
CX	categorical exclusion
CX-TBD	the planned activity is anticipated to be within categorical exclusion
CY	calendar year
DARHT	Dual-Axis Radiographic Hydrodynamic Test (facility)
D&D	Decommissioning and demolition
DOE	US Department of Energy
DVRS	Decontamination and Volume Reduction System
DX	Dynamic Experimentation (Division)
EA	environmental assessment
EA-CX	an environmental assessment found the proposed activity to be within categorical exclusion
EA-FONSI	an environmental assessment was conducted with a finding of no significant impact
EA-TBD	an environmental assessment has not been conducted but is anticipated
EIS	environmental impact statement
EIS Draft	an EIS was drafted and issued for public comment
EIS-Prep	an EIS has been determined to be needed and is currently being prepared
EIS-ROD	an EIS was written and record of decision issued
EIS-TBD	a determination of need for EIS is not yet complete, but an EIS is anticipated
EPA	US Environmental Protection Agency
ER	Environmental Restoration (Project)
ESA	Engineering Sciences and Applications (Division)
FIRP	Facilities and Infrastructure Recapitalization Program
FITS	Facility Improvement Technical Support (building)
FTE	full-time equivalent (employee)
FY	fiscal year
GPP	General Plant Project
HC	Hazard Category
HEPA	high-efficiency particulate air (filter)
HEWTF	High Explosives Waste Treatment Facility
HRL	Health Research Laboratory
HSWA	Hazardous and Solid Waste Amendment
HVAC	heating, ventilation, and air conditioning
IAEA	International Atomic Energy Agency
ICE	Irradiation of Chips and Electronics
JCNNM	Johnson Controls Northern New Mexico
kV	kilovolt
LA	Laboratory of Anthropology
LANL	Los Alamos National Laboratory
LANSCE	Los Alamos Neutron Science Center
LEDA	Low-Energy Demonstration Accelerator
linac	linear accelerator
LIR	Laboratory Implementing Requirement
LLW	low-level waste
LPSS	Long-Pulse Spallation Source

LWC	lost workday cases (rate)
m	meter
MDA	Material Disposal Area
MeV	million electron volts
MGY	million gallons per year
MLLW	mixed low-level waste
MSL	Materials Science Laboratory
NEPA	National Environmental Policy Act
NFA	no further action
NISC	Nonproliferation and International Security Center
NMED	New Mexico Environment Department
NMSF	Nuclear Materials Storage Facility
NMSHPD	New Mexico State Historic Preservation Department
NNSA	National Nuclear Security Administration
NO_x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRC	US Nuclear Regulatory Commission
NRHP	National Register of Historic Places
OPC	Other Project Costs
OSR	Offsite Source Recovery (Program)
PCB	polychlorinated biphenyl
PE & D	Preliminary Engineering and Design
PHERMEX	Pulsed High-Energy Radiographic Machine Emitting X-rays (facility)
PNM	Public Service Company of New Mexico
PRS	potential release site
psi	pounds per square inch
PTLA	Protection Technology Los Alamos
RAMROD	Radioactive Materials Research Operations and Demonstration (facility)
RANT	Radioactive Assay and Nondestructive Test (facility)
RCRA	Resource Conservation and Recovery Act
rem	roentgen equivalent man
RLWTF	Radioactive Liquid Waste Treatment Facility
ROD	record of decision
RTBF	Readiness in Technical Base and Facilities
S-3	Security Systems Group
SCC	Strategic Computing Complex
SHEBA	Solution High-Energy Burst Assembly
SNM	special nuclear material
SO_x	sulfur oxides
SWEIS	Site-Wide Environmental Impact Statement
SWMU	solid waste management unit
TA	Technical Area
TBD	to be determined
TEC	Total Estimated Cost
TEDE	total effective dose equivalent
TFF	Target Fabrication Facility
TRI	total recordable incident (rate)
TRU	transuranic
TSCA	Toxic Substances Control Act
TSFF	Tritium Science and Fabrication Facility
TSTA	Tritium System Test Assembly (facility)
TWISP	Transuranic Waste Inspectable Storage Project
TYCSP	Ten-Year Comprehensive Site Plan
U_3O_8	uranium oxide
UC	University of California
UF/RO	ultrafiltration/reverse osmosis
UNH	uranium nitrate hexahydrate
VCA	voluntary corrective action
WCRR	Waste Characterization, Reduction, and Repackaging (facility)
WETF	Weapons Engineering Tritium Facility
WIPP	Waste Isolation Pilot Plant
WNR	Weapons Neutron Research (facility)
WTA	Western Technical Area

Preface

In the Record of Decision for Stockpile Stewardship and Management, the US Department of Energy (DOE)[1] charged LANL with several new tasks, including war reserve pit production. DOE evaluated potential environmental impacts of these assignments in the Site-Wide Environmental Impact Statement for Continued Operation of the Los Alamos National Laboratory (DOE 1999a). This Site-Wide Environmental Impact Statement (SWEIS) provided the basis for DOE decisions to implement these new assignments at LANL through the SWEIS Record of Decision (ROD) issued in September 1999 (DOE 1999b).

Every five years, DOE performs a formal analysis of the adequacy of the SWEIS to characterize the environmental envelope for continuing operations at LANL. The Annual SWEIS Yearbook was designed to assist DOE in this analysis by comparing operational data with projections of the SWEIS for the level of operations selected by the ROD. As originally planned, the Yearbook was to be published one year following the activities; however, publication was moved approximately six months earlier to achieve timely presentation of the information. Yearbook publications to date include the following:

- "SWEIS 1998 Yearbook," LA-UR-99-6391, December 1999 (LANL 1999, http://lib-www.lanl.gov/cgi-bin/getfile?00460172.pdf).
- "SWEIS Yearbook – 1999," LA-UR-00-5520, December 2000 (LANL 2000a, http://lib-www.lanl.gov/cgi-bin/getfile?LA-UR-00-5520.htm).
- "A Special Edition of the SWEIS Yearbook, Wildfire 2000," LA-UR-00-3471, August 2000 (LANL 2000b, http://lib-www.lanl.gov/cgi-bin/getfile?00393627.pdf).
- "SWEIS Yearbook – 2000," LA-UR-01-2965, July 2001. (LANL 2001, http://lib-www.lanl.gov/la-pubs/00818189.pdf).
- "SWEIS Yearbook – 2001," LA-UR-02-3143, September 2002 (LANL 2002, http://lib-www.lanl.gov/cgi-bin/getfile?00818857.pdf).
- "SWEIS Yearbook – 2002" LA-UR-03-5862, September 2003 (LANL 2003, http://lib-www.lanl.gov/cgi-bin/getfile?LA-UR-03-5862.htm).

The collective set of Yearbooks contains data needed for trend analyses, identifies potential problem areas, and enables decision-makers to determine when and if an updated SWEIS or other National Environmental Policy Act (NEPA) analysis is necessary. This edition of the Yearbook summarizes the data from 1998 to 2002, and provides trend analysis of these data to assist DOE in its decision-making process. A similar summarization will be prepared every five years, as appropriate.

As with previous editions, the covers include inset photographs depicting important events that happened during the calendar year under review. The photograph on the front cover this year represents past human occupation of the Pajarito Plateau with an archaeological excavation on property destined for transfer from the Department of Energy to Los Alamos County. The photograph on the back cover depicts a current capability at the Laboratory—'the Wall' in the Strategic Computing Complex which houses the world's fastest computers.

[1] Congress established the National Nuclear Security Administration (NNSA) within the DOE to manage the nuclear weapons program for the United States. Los Alamos National Laboratory (LANL or Laboratory) is one of the facilities now managed by the NNSA. The NNSA officially began operations on March 1, 2000. Its mission is to carry out the national security responsibilities of the DOE, including maintenance of a safe, secure, and reliable stockpile of nuclear weapons and associated materials capabilities and technologies; promotion of international nuclear safety and nonproliferation; and administration and management of the naval nuclear propulsion program.

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Executive Summary

In 1999, the US Department of Energy (DOE) published a Site-Wide Environmental Impact Statement (SWEIS) for Continued Operation of Los Alamos National Laboratory (LANL or Laboratory)(DOE 1999a). DOE issued a Record of Decision (ROD) for this document in September 1999 (DOE 1999b).

DOE and LANL implemented a program, the Annual Yearbook, making comparisons between SWEIS ROD projections and actual operations data for two reasons: first, to preserve and enhance the usefulness of the SWEIS as a "living" document, and second, to provide DOE with a tool to assist in determining the continued adequacy of the SWEIS in characterizing existing operations. The Yearbooks from calendar year (CY) 1998 through CY 2001 focus on operations during one calendar year and specifically address the following:

- facility and/or process modifications or additions,
- types and levels of operations during the calendar year,
- operations data for the Key Facilities, and
- site-wide effects of operations for the calendar year.

The 2002 Yearbook is a special edition to assist DOE/National Nuclear Security Administration in evaluating the need for preparing a new SWEIS for LANL. This edition of the Yearbook summarizes the data routinely collected from CY 1998 through CY 2002 as described above. It also contains additional text and tabular summaries as well as a trend analysis. The 2002 Yearbook also indicates the Laboratory's programmatic progress in moving towards the SWEIS projections.

The SWEIS analyzed the potential environmental impacts of scenarios for future operations at LANL. DOE announced in its ROD that it would operate LANL at an expanded level and that the environmental consequences of that level of operations were acceptable. The ROD is not a predictor of specific operations, but establishes boundary conditions for operations. The ROD provides an environmental operating envelope for specific facilities and for the Laboratory as a whole. If operations at LANL were to routinely exceed the operating envelope, DOE would evaluate the need for a new SWEIS. As long as LANL operations remain below the level analyzed in the ROD, the environmental operating envelope is valid. Thus, the levels of operation projected by the SWEIS ROD should not be viewed as goals to be achieved, but rather as acceptable operational levels.

The Yearbooks address capabilities and operations using the concept of "Key Facility" as presented in the SWEIS. The definition of each Key Facility hinges upon operations (research, production, or services) and capabilities and is not necessarily confined to a single structure, building, or technical area. Chapter 2 discusses each of the 15 Key Facilities from three aspects—significant facility construction and modifications that have occurred from 1998 through 2002, the types and levels of operations that occurred from 1998 through 2002, and the 1998 through 2002 operations data. Chapter 2 also discusses the "Non-Key Facilities," which include all buildings and structures not part of a Key Facility, or the balance of LANL.

During 2002, planned construction and/or modifications continued at six of the 15 Key Facilities. These activities were both modifications within existing structures and new or replacement facilities. New structures completed and occupied during 2002 included the Technical Area (TA) 18 Relocation Project Office Building between TA-48 and TA-55, the Vessel Preparation Facility at TA-15, a Camera Room at TA-36-12, a Carpenter Shop at TA-15, the X-Ray Calibration Facility at TA-15, a Warehouse at TA-15, and the transportable office building TA-48-210. Additionally, 13 major construction projects were either completed or continued for the Non-Key Facilities. These projects were as follows:

- Construction continued on the Nonproliferation and International Security Center that was begun in March 2001.
- Atlas was disassembled and relocated to the Nevada Test Site in December 2002.

- Construction of the Emergency Operations Center started in January 2002.
- Construction of the S-3 Security Systems Support Facility started in July 2002.
- Construction of the Decision Applications Division Office Building started in September 2002.
- Construction of the new Medical Facility started in October 2002.
- The Chemistry Division Office Building was constructed, completed, and occupied.
- Construction of the Materials Science and Technology Office Building started in November 2002.
- Construction of the TA-72 Live Fire Shoot House started in November 2002.
- The Security Truck Inspection Station was constructed and became operational.
- The High Pressure Tritium Facility (TA-33-86) underwent decontamination and decommissioning and is now demolished.
- Demolition activities began in July 2002 on the Omega West Reactor Facility.
- TA-41-30 and the front of TA-41-4 were demolished August to October 2002.

The ROD projected a total of 38 facility construction and modification projects for LANL. Twenty projects have now been completed: six in 1998, eight in 1999, two in 2000, and four in 2002. The number of projects started or continued each year were 13 in 1998, 10 in 1999, seven in 2000, and six in both 2001 and 2002.

A major modification project, elimination and/or rerouting of National Pollutant Discharge Elimination System (NPDES) outfalls, was completed in 1999, bringing the total number of permitted outfalls down from the 55 identified by the SWEIS ROD to 20. During 2000, Outfall 03A-199, which will serve the TA-03-1837 cooling towers, was included in the new NPDES permit issued by the US Environmental Protection Agency (EPA) on December 29, 2000. This brings the total number of permitted outfalls up to 21. During 2002, only 17 of the 21 outfalls flowed.

As in the Yearbooks since 1999, this issue reports chemical usage and calculated emissions (expressed as kilograms per year) for the Key Facilities, based on an improved chemical reporting system. The 2002 chemical usage amounts were extracted from the Laboratory's EX3 chemical inventory system rather than the Automated Chemical Inventory System used in the past. The quantities used for this report represent chemicals procured or brought on site by calendar year from 1999 through 2002. Information is presented in Appendix A for actual chemical use and estimated emissions for each Key Facility. Additional information for chemical use and emissions reporting can be found in the annual Emissions Inventory Report as required by New Mexico Administrative Code, Title 20, Chapter 2, Part 73 (20 NMAC 2.73). The most recent report is "Emissions Inventory Report Summary, Reporting Requirements for the New Mexico Administrative Code, Title 20, Chapter 2, Part 73 (20 NMAC 2.73) for Calendar Year 2000" (LANL 2001).

With a few exceptions, the capabilities identified in the SWEIS ROD for LANL have remained constant since 1998. The exceptions are the

- movement of the Nonproliferation Training/ Nuclear Measurement School between Pajarito Site and the Chemistry and Metallurgy Research (CMR) Building during 2000 and 2002,
- relocation of the Decontamination Operations Capability from the Radioactive Liquid Waste Treatment Facility (RLWTF) to the Solid Radioactive and Chemical Waste Facilities in 2001,
- transfer of part of the Characterization of Materials Capability from Sigma to the Target Fabrication Facility (TFF) in 2001, and
- loss of Cryogenic Separation Capability at the Tritium Key Facilities in 2001.

Also, following the events of September 11, 2001, the Laboratory was requested to provide support for homeland security.

Since CY 1998, fewer than the 96 capabilities identified for LANL have been active. During 1998, only 87 capabilities were active. The nine capabilities with no activity were Manufacturing Plutonium Components at the Plutonium Complex; both Uranium Processing and Nonproliferation Training at the CMR Building; Accelerator Transmutation of Wastes at the Los Alamos Neutron Science Center (LANSCE); Biologically Inspired Materials and Chemistry, Computational Biology, and Molecular and Cell Biology at the Bioscience Facilities; and both Size Reduction and Other Waste Processing at the Solid Radioactive and Chemical Waste Facilities.

During CY 1999, 91 capabilities were active. The five inactive capabilities were Fabrication and Metallography at CMR; both Accelerator Transmutation of Wastes and Medical Isotope Production at LANSCE; and both Size Reduction and Other Waste Processing at the Solid Radioactive and Chemical Waste Facilities.

During CY 2000, 89 capabilities were active. The seven inactive capabilities were Fabrication of Ceramic-Based Reactor Fuels at the Plutonium Complex; Diffusion and Membrane Purification at the Tritium Facilities; both Destructive and Nondestructive Assay and Fabrication and Metallography at CMR; Accelerator Transmutation of Wastes and Medical Isotope Production at LANSCE; and both Size Reduction and Other Waste Processing at the Solid Radioactive and Chemical Waste Facilities.

During CY 2001, 87 capabilities were active. The nine inactive capabilities were both Manufacturing Plutonium Components and Fabrication of Ceramic-Based Reactor Fuels at the Plutonium Complex; both Cryogenic Separation and Diffusion and Membrane Purification at the Tritium Facilities; both Destructive and Nondestructive Assay and Fabrication and Metallography at CMR; Accelerator Transmutation of Wastes and Medical Isotope Production at LANSCE; and Other Waste Processing at the Solid Radioactive and Chemical Waste Facilities.

During CY 2002, 88 capabilities were active. The eight inactive capabilities were Manufacturing Plutonium Components at the Plutonium Complex; both the Cryogenic Separation and the Diffusion and Membrane Purification capabilities at the Tritium Facilities; both the Destructive and Nondestructive Assay and the Fabrication and Metallography capabilities at CMR; both the Accelerator Transmutation of Wastes and the Medical Isotope Production capabilities at LANSCE; and Other Waste Processing at the Solid Radioactive and Chemical Waste Facilities.

As in the preceding calendar years from 1998 through 2001, only three of LANL's facilities operated during 2002 at levels approximating those projected by the ROD—the Materials Science Laboratory (MSL), the Bioscience Facilities (formerly Health Research Laboratory), and the Non-Key Facilities. The two Key Facilities (MSL and Bioscience) are more akin to the Non-Key Facilities and represent the dynamic nature of research and development at LANL. More importantly, none of these facilities are major contributors to the parameters that lead to significant potential environmental impacts. The remaining 13 Key Facilities all conducted operations at or below projected activity levels.

From 1998 through 2002, radioactive airborne emissions from point sources (i.e., stacks) have varied from a low of 1,900 curies during 1999 to a high of approximately 15,400 curies during 2001, 70 percent of the ten-year average of 21,700 curies projected by the SWEIS ROD. The final dose over this same five-year period has varied from a low of 0.32 millirem in 1999 to a high of 1.84 millirem during 2001 (compared to 5.44 projected), with the final dose for 2002 being reported to the EPA by June 30, 2002. Calculated NPDES discharges have ranged from a low of 124 million gallons per year in 2001 to a high of 317 million gallons per year in 1999 compared to a projected volume of 278 million gallons per year. However, the apparent decrease in flows is primarily due to the methodology by which flow was measured and reported in the past. Historically, instantaneous flow was measured during field visits as required in the NPDES permit. These measurements were then extrapolated over a 24-hour day/seven-day week. With implementation of the

new NPDES permit on February 1, 2001, data are collected and reported using actual flows recorded by flow meters at most outfalls. At those outfalls that do not have meters, the flow is calculated as before, based on instantaneous flow. Quantities of solid radioactive and chemical wastes generated have ranged from approximately 3.2 percent of the mixed low-level radioactive waste projections during both 1999 and 2002 to 1,291 percent and 1,309 percent of the chemical waste projections during 2001 and 2000, respectively. The extremely large quantities of chemical waste (23.0 million kilograms during 2001 and 27.2 million kilograms during 2000) are a result of Environmental Restoration (ER) Project activities. (For example, the remediation of Material Disposal Area [MDA] P resulted in 21.5 million kilograms, or 88 percent, of the 24.4 million kilograms of chemical waste generated during 2001.) Most chemical wastes are shipped offsite for disposal at commercial facilities; therefore, these large quantities of chemical waste will not impact LANL environs. The chemical waste quantities are the only solid waste type to have met or exceeded the SWEIS ROD projections between 1998 and 2002.

The workforce has been above ROD projections since 1997. The 13,524 employees at the end of CY 2002 represent 2,173 more employees than projected and the highest number of employees over the period. Since 1998, the peak electricity consumption was 394 gigawatt-hours during 2002 and the peak demand was 72 megawatts during 2001 compared to projections of 782 gigawatt-hours with a peak demand of 113 megawatts. The peak water usage was 461 million gallons during 1998 (compared to 759 million gallons projected), and the peak natural gas consumption was 1.49 million decatherms during 2001 (compared to 1.84 million decatherms projected). Between 1998 and 2002, the highest collective Total Effective Dose Equivalent (TEDE) for the LANL workforce was 196 person-rem during 2000, which is considerably lower than the workforce dose of 704 person-rem projected by the ROD.

Measured parameters for ecological resources and groundwater were similar to ROD projections, and measured parameters for cultural resources and land resources were below ROD projections. For land use, the ROD projected the disturbance of 48 acres of new land at TA-54 because of the need for additional disposal cells for low-level radioactive waste. As of 2002, this expansion had not become necessary. However, construction continued on 44 acres of land that are being developed along West Jemez Road for the Los Alamos Research Park. This project has its own National Environmental Policy Act documentation (an environmental assessment), and the land is being leased to Los Alamos County for this privately owned development.

Cultural resources remained protected, and no excavation of sites at TA-54 of LANL has occurred. (The ROD projected that 15 prehistoric sites would be affected by the expansion of Area G into Zones 4 and 6 at TA-54.) However, excavations did occur at the Airport East and White Rock tracts beginning in June 2002 and ending in March 2003. These two land tracts are now available to the County of Los Alamos for development.

As projected by the ROD, water levels in wells penetrating into the regional aquifer continue to decline in response to pumping, typically by several feet each year. In areas where pumping has been reduced, water levels show some recovery. No unexplained changes in patterns have occurred in the 1995–2002 period, and water levels in the regional aquifer have continued a gradual decline that started in about 1977. In addition, ecological resources are being sustained as a result of protection afforded by DOE ownership of LANL. These resources include biological resources such as protected sensitive species, ecological processes, and biodiversity. The recovery and response to the Cerro Grande Fire of May 2000 included a wildfire fuels reduction program, burned area rehabilitation and monitoring efforts, and enhanced vegetation and wildlife monitoring.

In conclusion, LANL operations data mostly fell within projections. Operations data that exceeded projections, such as number of employees or chemical waste from cleanup, either produced a positive impact on the economy of northern New Mexico or resulted in no local impact because these wastes were shipped offsite for disposal. Overall, the 1998 through 2002 operations data indicate that the Laboratory was operating within the SWEIS envelope and still ramping up operations towards the preferred Expanded Alternative in the ROD.

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Acknowledgments

The Site-Wide Issues Program Office was closed on April 4, 2002. This office prepared the first three editions of the Yearbook and initiated preparation of Yearbook 2001. The Ecology Group of the Risk Reduction and Environmental Stewardship Division accomplished completion of Yearbooks 2001 and 2002. Ken Rea served as document manager; chief contributors were Theresa Rudell, Susan Radzinski, and Peggy Powers. Gil Gonzales prepared the impact analysis in Appendix E.

Jay Brown and Mahavir Jain provided prompt review of the document for classification issues and helped solve several concerns.

Phil Noll provided photographic support and Hector Hinojosa provided editorial support. Kelly Parker served as the designer, combining text and photographs to create a final product, with the help of Diedré Plumlee and Mike Anderson, electronic publication specialists. We would also like to thank Winters Red Star and Andi Kron for creating maps and figures.

Many individuals assisted in the collection of information and review of drafts. Data and information came from many parts of the Laboratory, including facility and operating personnel and those who monitor and track environmental parameters. The Yearbook could not have been completed and verified without their help. Though all individuals cannot be mentioned here, the table below identifies major players from each of the Key Facilities and other operations.

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1.0 Introduction

1.1 The SWEIS

In 1999, the US Department of Energy (DOE)[1] published a Site-Wide Environmental Impact Statement for Continued Operation of the Los Alamos National Laboratory (DOE 1999a). DOE issued its Record of Decision (ROD) on this Site-Wide Environmental Impact Statement (SWEIS) in September 1999 (DOE 1999b). The ROD identified the decisions DOE made on levels of operation for LANL for the foreseeable future.

1.2 Annual Yearbook

To enhance the usefulness of this SWEIS, a National Environmental Policy Act (NEPA) document, DOE and LANL implemented a program making annual comparisons between SWEIS ROD projections and actual operations via an Annual Yearbook. The Yearbook's purpose is not to present environmental impacts or environmental consequences, but rather to provide data that could be used to develop an impact analysis. The Yearbook focuses on the following:

- Facility and process modifications or additions (Chapter 2). These include projected activities, for which NEPA coverage was provided by the SWEIS, and some post-SWEIS activities for which environmental coverage was not provided. In the latter case, the Yearbook identifies the additional NEPA analyses (i.e., categorical exclusions and environmental assessments) that were performed.

- The types and levels of operations during the calendar year (Chapter 2). Types of operations are described using capabilities defined in the SWEIS. Levels of operations are expressed in units of production, numbers of researchers, numbers of experiments, hours of operation, and other descriptive units.

- Operations data for the Key Facilities, comparable to data projected by the SWEIS ROD (Chapter 2). Data for each facility include waste generated, air emissions, liquid effluents, and number of workers.

- Site-wide effects of operations for the calendar year (Chapter 3). These include measures such as number of workers, radiation doses, workplace incidents, utility requirements, air emissions, liquid effluents, and solid wastes. These effects also include changes in the regional aquifer, ecological resources, and other resources for which the DOE has long-term stewardship responsibilities as an owner of federal lands.

- Trend analysis (Chapter 4). This includes analysis on land use, quantities of waste generated, utility consumption, long-term effects from Laboratory operations, and the Cerro Grande Rehabilitation Project.

- Ten-Year Comprehensive Site Plan (TYSCP; Chapter 5). This is a summary of what the Laboratory is proposing for potential future projects relative to land usage; structure maintenance, construction, and decontamination and demolition; and infrastructure maintenance and improvements.

[1] Congress established the National Nuclear Security Administration (NNSA) within the DOE to manage the nuclear weapons program for the United States. Los Alamos National Laboratory (LANL or Laboratory) is one of the facilities now managed by the NNSA. The NNSA officially began operations on March 1, 2000. Its mission is to carry out the national security responsibilities of the DOE, including maintenance of a safe, secure, and reliable stockpile of nuclear weapons and associated materials capabilities and technologies; promotion of international nuclear safety and nonproliferation; and administration and management of the naval nuclear propulsion program.

- Summary and conclusion (Chapter 6). This chapter summarizes CY 1998 through CY 2002 for the Laboratory in terms of overall facility construction and modifications, facility operations, and operations data and environmental parameters. These data form the basis of the conclusion for whether or not the Laboratory is operating within the envelope of the SWEIS ROD.

- Chemical usage and emissions data (Appendix A). These data summarize the chemical usage and air emissions by Key Facility.

- Nuclear facilities list (Appendix B). This appendix provides a summary of the facilities identified as nuclear at the time the SWEIS was developed through CY 2002.

- Radiological facilities list (Appendix C). These data identify the facilities considered as radiological in CY 2001 and CY 2002 and indicate their categorization at the time the SWEIS was developed.

- Outfall status table (Appendix D). This table delineates outfalls at LANL and chronicles usage history.

- Preliminary Assessment of Potential Impact of LANL Site Boundary Changes and Land Transfer on Accident Analyses in the SWEIS (Appendix E). This appendix provides an assessment of the potential impact of land transfers on the accident analyses in the SWEIS.

- Future projects (Appendix F). This appendix summarizes the projects identified in the TYCSP.

Data for comparison come from a variety of sources, including facility records, operations reports, facility personnel, and the annual Environmental Surveillance Report. The focus on operations rather than on programs, missions, or funding sources is consistent with the approach of the SWEIS.

The Annual Yearbooks provide DOE with information needed to evaluate adequacy of the SWEIS and enables DOE to make decisions on when and if a new SWEIS is needed. Once every five years, DOE will make a formal evaluation of the SWEIS as to its adequacy, and therefore, every fifth year, the Yearbook will not only report the previous years, data on operations, but will also include summaries and trends of the data presented in the previous four editions.

The Yearbooks also provide facilities and managers at the Laboratory a guide in determining whether activities are within the SWEIS operating envelope. The report does not reiterate the detailed information found in other LANL documents, but rather points the interested reader to those documents for the additional detail. The Yearbook serves as a guide to environmental information collected and reported by the various groups at LANL.

The SWEIS analyzed the potential environmental impacts of scenarios for future operations at LANL. DOE announced in its ROD that it would operate LANL at an expanded level and that the environmental consequences of that level of operations were acceptable. The ROD is not a predictor of specific operations, but establishes boundary conditions for operations. The ROD provides an environmental operating envelope for specific facilities and for the Laboratory as a whole. If operations at LANL were to routinely exceed the operating envelope, DOE would evaluate the need for a new SWEIS. As long as LANL operations remain below the level analyzed in the ROD, the environmental operating envelope is valid. Thus, the levels of operation projected by the SWEIS ROD should not be viewed as goals to be achieved, but rather as acceptable operational limits.

1.3 This Yearbook

The ROD selected levels of operations, and the SWEIS provided projections for these operations. This Yearbook compares data from 1998 through 2002 to the appropriate SWEIS projections. Hence, this report uses the phrases "SWEIS ROD projections," "SWEIS ROD," or "ROD" to convey this concept, as appropriate.

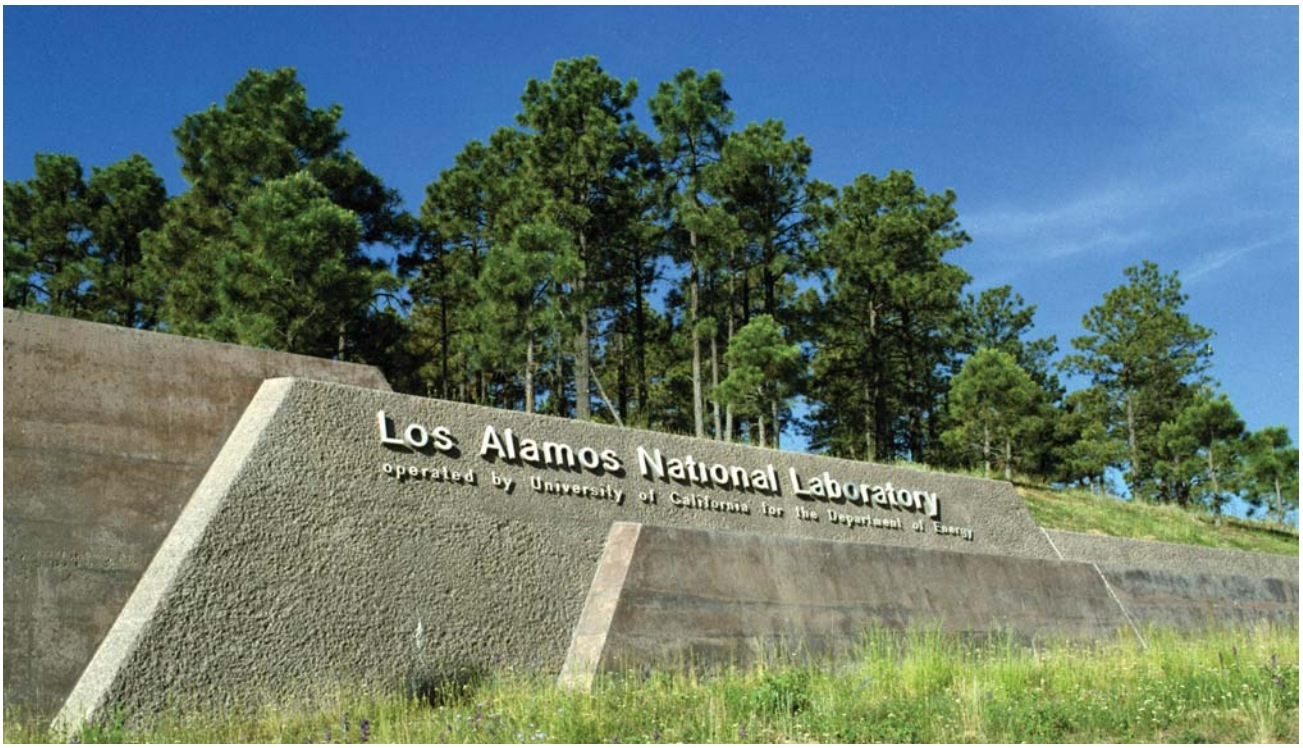
The collection of data on facility operations is a unique effort. The type of information developed for the SWEIS is not routinely collected at LANL. Nevertheless, this information is the heart of the SWEIS and the Yearbook. Although this requires a special effort, the description of current operations and indications of future changes in operations are believed to be sufficiently important to warrant an incremental effort.

This Yearbook represents the fifth year of data collection and comparison. Therefore, this Yearbook includes summaries of the previous four years, trends in the data across these years, and additional information as deemed necessary to enable DOE to use this document as the primary source of information for determination of the adequacy of the existing SWEIS.

1.4 References

Department of Energy, 1999a. "Site-Wide Environmental Impact Statement for Continued Operation of the Los Alamos National Laboratory," US Department of Energy document DOE/EIS-0238, Albuquerque, NM.

Department of Energy, 1999b. "Record of Decision: SWEIS in the State of New Mexico," 64 FR 50797, Washington, D.C.



Entrance to LANL

Aerial view–North from Pajarito Road